

Date: Thu, 27 Oct 94 04:30:14 PDT  
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>  
Errors-To: Ham-Ant-Errors@UCSD.Edu  
Reply-To: Ham-Ant@UCSD.Edu  
Precedence: List  
Subject: Ham-Ant Digest V94 #357  
To: Ham-Ant

Ham-Ant Digest                      Thu, 27 Oct 94                      Volume 94 : Issue    357

Today's Topics:

                    2m/70cm/cellular mobile antenna  
                    ACURATE ROTATORS ???  
                    Antenna Wizard Challenge  
                    Beverage antennas  
                    DX Engineering?!  
                    HAM\*INFO\*LINK\*SOURCE BBS  
Looking for comments on helically wound HF antennas  
                    Radio Shack Antennas?  
                    Short radials on a vertical ant.  
                    Uzbekistan licensing requirements?  
                    what IS a bevrage antenna? (2 msgs)

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Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Thu, 27 Oct 1994 01:37:18 GMT  
From: davidm@iglou.com (David Michael Moore)  
Subject: 2m/70cm/cellular mobile antenna

A while back there was a thread on here about available mobile antennas that  
allowed one to use 2m, 70cm, or cellular phone out of the same antenna. At  
the time I didn't need an antenna like that, so I didn't save the information.  
Naturally, now I need one.

Could some kind soul please re-post the manufacturerers and model numbers?!  
[Insert much shameless groveling and begging here]

David KD4RMW  
davidm@iglou.com

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Date: 25 Oct 1994 19:07:30 GMT  
From: little@iamu.chi.dec.com (Todd Little)  
Subject: ACURATE ROTATORS ???

In article <Cy785B.16F@ncifcrf.gov>, mack@ncifcrf.gov (Joe Mack) writes:  
|>In article <itbkl.27.782544661@puknet.puk.ac.za> itbkl@puknet.puk.ac.za (Keith  
Laaks) writes:  
|>>I read somewhere that most of the 'commercial' rotators is not capable of  
|>>rotating with an acceptable accuracy for EME. Apparently you need the  
|>>rotator to be able to rotate to within 0.5 or 0.25 of a degree (in both  
|>>planes).  
|>  
|>The theory is that drop off is about 1db /deg misalignement so to justify  
|>that low noise front end which shaved off 0.1db, you should also point your  
|>antennas with equivalent accuracy.

How was the 1dB/deg determined? This seems counter-intuitive considering  
the pattern of most antennas/arrays. The 4 antenna array the original poster  
mentioned I would guess at having a half power beam width of at least 15-20  
degrees and I would think then even a 5 degree pointing error would only  
yield 1 dB of loss. The gain pattern of most antennas yield a main lobe with  
a blunt end, i.e. gain starts to fall off much more quickly as you get to  
the half power beamwidth. Much closer to the center of the main lobe though  
has a fairly low rate of drop off.

Does 3 degrees of pointing error really result in a 3 dB loss?

73,  
Todd  
N9MWB

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Date: Wed, 26 Oct 1994 15:50:42 -0600  
From: tjf@beta.lanl.gov (Thomas J. Farish)  
Subject: Antenna Wizard Challenge

OK Antenna Wizards! Tell me about this setup (with which I am  
currently having difficulties):

I am setting up a phased-array of two helically-wound vertical  
antennas, resonant at 28.4 MHz. I am feeding them in phase with

two identical lengths of rg-58 co-ax, through a "T" fixture.  
I am not trying any funny tricks about setting the lengths of the coax to do the phasing (so I don't have the problem of having to separate the verticals by  $\lambda/2$ , but the coax is too short due to the velocity factor). The co-ax lengths are the same. The antennas are to be fed in phase.

More info:

I am using a MFJ SWR analyzer to get the verticals to resonate at 28.4 Mhz

The RF resistance is close to 45 Ohms on each (very slight difference between the two).

Now the question:

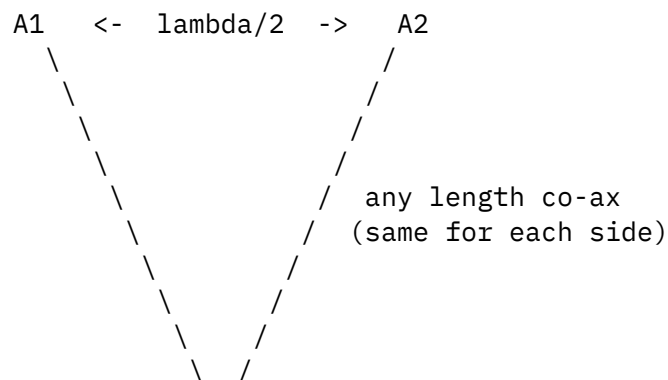
What RF resistance do I see at the radio end of the co-ax at 28.4 Mhz?  
What impedance?

Will this be like two 45-Ohm resistors in parallel -> 22.5 Ohms?

Would I see something different if I made the antennas out of tubing about  $234/28.4 = 8'4"$  ft long? (Slope the radials at 45 degrees to get close to 50 ohms -> two parallel 50 Ohm resistors?)

I am going to eventually have three antennas in a triangular pattern and do the phasing with a set of balun coils and switches to change the sense of the signal going into three lengths of co-ax, but that will come later.

Here is an ASCII drawing of the present setup:



- "T" connector  
|  
|  
|  
to Radio

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Date: Thu, 27 Oct 1994 03:52:49 GMT  
From: bart@wb6hqm.ampr.org (Bart Rowlett)  
Subject: Beverage antennas

In article <321\_9410221145@unique.pronet.com>,  
Dave Headland <Dave.Headland@f725.n635.z3.fidonet.org> wrote:  
> Has anyone come up with a convenient way of remotely varying the resistance  
> of the termination to earth from the far end of a beverage antenna, from the  
> receiver end? I've been playing with an idea of using photocells, controlled  
> by LEDs, but have come up with a problem of too much resistance in the  
> antenna wire.

You might try self heating a thermistor. They can be pretty well thermally insulated and will change resistance at approximately 2% per degree C. Since no junctions are involved you should be pretty safe with regard to intermod.

PIN diodes might also work but I don't know if any are available which would be suitable for the frequencies you're likely to be interested in with a beverage.

Another approach is to use well filtered 60 Hz AC at whatever voltage is required to heat up a light bulb. The resistance of an incandescent lamp increases dramatically with applied voltage and might actually be a reasonable way to do the job. A 120 Volt lamp in the 3 to 25 watt range might do the trick.

Another approach would be to use a large MOSFET with the variable DC bias supplied through the antenna \_Very\_ well filtered and clamped at a safe voltage, applied to the Gate the Drain is AC coupled and the Source would be the common connection. This might work well but would require a careful design to assure survival of the device and acceptable intermodulation performance.

bart wb6hqm

bart@wb6hqm.ampr.org

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Date: 26 Oct 1994 07:20:02 GMT

From: Dino Darling <74212.1733@CompuServe.COM>  
Subject: DX Engineering?!

What happened to DX Engineering and are their antennas still  
available? Is there plans for anyone to pick up their designs?  
Thanks in advance for your replies! Dino..KC6RIX

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Date: Tue, 25 Oct 1994 19:17:11 GMT  
From: kb6axk@netcom.com (joe cira)  
Subject: HAM\*INFO\*LINK\*SOURCE BBS

new amateur radio "ham" bbs at 818-584-1952  
73 & 88 de kb6axk,joe

--  
US AMATEUR RADIO |sysop of the HAM\*INFO\*LINK\*SOURCE BBS|  
KB6AXK | at 1-818-584-1952,joe cira |  
PASADENA,CAL,91107| kb6axk@netcom.com |

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Date: Wed, 26 Oct 1994 22:13:20 -5  
From: umar@tiac.net (Rob Landry)  
Subject: Looking for comments on helically wound HF antennas

I've got a helically wound 160 meter antenna. It's a dipole suspended  
vertically from a tree limb in the back yard. The dipole consists of two  
sections. Each section is about 250 feet of #14 gauge insulated wire helically  
wound on a 2 inch PVC pipe 10 feet long. A capacity hat made of two  
straightened coat hangers is attached at the far end of ech section and the  
antenna is fed with open wire.

Results: very good signal out to 300 miles or so. Beyond that, largely  
useless. There appears to be a lot of high angle skywave radiation. That's not  
supposed to be possible, but the results suggest it is happening.

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Date: Wed, 26 Oct 1994 12:03:05 GMT  
From: freyder@netcom.com (Rob Freyder)  
Subject: Radio Shack Antennas?

darrylb@delphi.com wrote:  
: Mike Basinger <dbasinge@nickel.ucs.indiana.edu> writes:  
:  
: >I'm thinking about buy an car antenna for my HTX-202. Are the antennas



: 3. Do Moxon's arguments "make sense" or is he a crank?

: 4. I was wondering...could I use my old cb magmount as an inductively loaded counterpoise for a 10 meter vertical by cutting off it's feedline and connecting its center conductor to the shield of the 10 meter vertical feed?

: Thanks in advance!

Answers to your Questions:

First, You must differentiate between a ground system for a ground mounted Vertical, a radial system for an above ground mounted vertical and a counterpoise.

The latter two are very similar, and you can "load" the radial wires of a counterpoise or above ground radial system

However, loading a ground mounted system is relaly a waste of time.

1. You can do quite well with 1/8 wave radials as long a syou have 12-18 of them on the ground or burried an inch or so into the ground. (use a driveway edger to slit the sod and push the wire into it... Wives love to do this!!)

2.& 3. Moxon is correct, but then you can make anything work if you fool

with it enough.

4. the magmount is a waste of time.

use as many radials as possible to get a good match. Remember, you must match a 75 ohm load on a 1/4 wave or trap vertical. you have to match that impedance, which is why many antennas have an impedance transformer in line with the coax to the shack.

You must do a little reading to get it right, but you are on the right track.

I wasted a lot of time and wire with not much improvement in results by trying loaded counterpoise for 80 and 160 with a butternut mounted on my roof  
Good luck and have fun 73, dah-di-dah

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Peter Rimmel  
k8unp@bcfreenet.seflin.lib.fl.us

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Date: 26 Oct 1994 18:01:51 GMT  
From: bc21470@bingsuns.cc.binghamton.edu ()

The bevrage part comes for the name of the discoverer. It is a long wire antenna, typically 3 wave lengths or so that is used on the low bands as a receiving antenna (often on 160M). Another interesting thing about bevrages is that they are low to the ground, ie 5 or ten feet.



73 and check the Antenna Handbook or Low Band DXing  
Jim KD0AV

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End of Ham-Ant Digest V94 #357  
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